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DIV. OF OIL, GAS & MINING

ERRC-325-02

December 20, 2002

Dr. Eva Hoffman
United States Environmental Protection Agency, Region VIII
999 18th Street, Suite 300
Denver, CO, 80202-2466

RE: Comments on the Operations and Maintenance (O&M) Plan for the Reclaimed Kennecott South Jordan Evaporation Ponds

Dear Dr. Hoffman,

The Division of Environmental Response and Remediation (DERR) has reviewed the above referenced plan and is submitting the following comments for response. Please advise DERR of Kennecott Land Company's (KLC) responses to our comments.

Also included are DERR's comments on the documents provided by KLC for their reclamation activities associated with the South Jordan Evaporation Ponds (SJEP) footprint. You will note that specific comments two and three on the SJEP Operation and Maintenance (O&M) plan were also included in the draft comments provided to KLC per their request. The comments on the SJEP reclamation package have been responded to and the responses are currently being reviewed.

If you have any questions, please feel free to call me at (801) 536-4282.

Sincerely,

Douglas C. Bacon, Project Manager
Division of Environmental Response and Remediation

DCB/klv

Enclosure

cc: Jonathan Callender, Kennecott Land Company
Tom Munson, Division of Oil, Gas and Mining
Patti Pavey, M.S., Director, Salt Lake Valley Health Department

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DERR Comments on the Operation and Maintenance Plan for the Reclaimed Kennecott South Jordan Evaporation Ponds

General Comments on the SJEP O&M Plan:

(1) The terms "sulfate-bearing sludge" and "pond sediments" are used interchangeably. One term or the other should be chosen and used consistently throughout the text. Please review the text and make the appropriate corrections.

Specific Comments on the SJEP O&M Plan:

(1) Page 1, Section – Introduction, 1st paragraph, 4th sentence: It states that the O&M plan may be amended again, with concurrence from EPA, whenever future site changes or events occur that may affect the performance of the approved remedy. Because of the potential to have some soils (mixed soils) with residual sulfate remain on-site and capped and the need to protect the cap against water infiltration to prevent the production of sulfate bearing water, DERR wishes to be included in the review and concurrence of future amendments to this plan. Please state that concurrence from both EPA and DERR will be sought by KLC.

(2) Page 2, Remedial Action, 2nd paragraph, 2nd and 3rd sentences: It states that mixed soils previously used for capping the sludge were used in part for mass grading and fill in the Sunrise South Jordan master planned community (MPC). It further states that of the mixed soils, topsoil and cap soil were stockpiled for use in the MPC, while the remaining mixed soils were returned to the Consolidation Area. Note that this work activity has yet to be initiated, this document was drafted in the past tense. Please explain why the mixed soil material will remain on-site. Please provide the final concentrations of the contaminants of concern in the mixed soils. Please explain why some mixed soils will be returned to the Consolidation Area. Please state where the mixed soils will be placed in the MPC and whether it is in areas requiring supplemental irrigation.

(3) Page 3, Maintenance Program, bulleted list: There are two institutional controls proposed for use: (1) ensure that the CC&Rs and land uses are properly implemented, and (2) restrict artificial irrigation of mixed soils. Please explain who will ensure oversight functions and under what authority. Please explain who will ensure compliance of the institutional controls and how often. Please provide the CC&Rs that will be used to bring areas in the MPC back into compliance if compliance fails to be maintained in the future. Please explain if the CC&Rs will include the control standards to be maintained. DERR suggests that if there is supporting documentation for these proposed institutional controls that they please be attached to the O&M plan as appendices.

DERR Comments on the Information Packet for the South Jordan Evaporation Ponds Cleanup - *(for reference)*

General Comments:

(1) Throughout the text of the submittals the phrases "pond sediment" and "pond sludge" are used interchangeably. DERR suggests that Kennecott Land Company (KLC) determine which phrase is appropriate and stick to one throughout the text of each submittal.

Comments on the Operation and Maintenance of the Reclaimed Kennecott South Jordan Evaporation Ponds – Amended Plan:

(1) Page 2, Remedial Action, 2nd paragraph, 2nd and 3rd sentences: It states that mixed soils previously used for capping the sludge were used in part for mass grading and fill in the Sunrise South Jordan master planned community (MPC). It further states that of the mixed soils, topsoil and cap soil were stockpiled for use in the MPC, while the remaining mixed soils were returned to the Consolidation Area. Note that this work activity has yet to be initiated, this document was drafted in the past tense. Please explain why the mixed soil material will remain on-site. Please provide the final concentrations of the contaminants of concern in the mixed soils. Please explain why some mixed soils will be returned to the Consolidation Area. Please state where the mixed soils will be placed in the MPC and whether it is in areas requiring supplemental irrigation.

(2) Page 3, Maintenance Program, bulleted list: There are two institutional controls proposed for use: (1) ensure that the CC&Rs and land uses are properly implemented, and (2) restrict artificial irrigation of mixed soils. Please explain who will ensure oversight functions and under what authority. Please explain who will ensure compliance of the institutional controls and how often. Please provide the CC&Rs that will be used to bring areas in the MPC back into compliance if compliance fails to be maintained in the future. Please explain if the CC&Rs will include the control standards to be maintained. DERR suggests that if there is supporting documentation for these proposed institutional controls that they please be attached to the O&M plan as appendices.

Comments on the paper covering *Infiltration and Leachability of Sulfate*:

(1) Page 1, *Introduction*, 2nd paragraph, 1st sentence: Similar to comment No.1 on the O&M Plan, please explain why the mixed soils will be remaining within the MPC, while other mixed soils are being delivered to the Consolidation Area.

(2) Page 1, *Introduction*, 2nd paragraph, 2nd sentence: It states that an impermeable liner will cover approximately half of the Consolidation Area. Please explain what the liner will be made of and why it is needed. The first sentence in the paragraph implies that some portion of the mixed soils will be placed within the consolidation area. Please explain how much of the soil will be placed upon the lined area.

(3) Page 1, *Introduction*, 2nd paragraph, 3rd sentence: The sentence states that the relocated mixed soils will be placed on 168 acres, of which 30 percent will be open space, 25 percent will be lawns and the remaining acreage will be covered by streets and houses. Please explain how much of the lawns and open space acreage will be irrigated.

(4) Page 3, *Sulfate Concentrations, Leachability and Mass*, 1st paragraph, 1st sentence: The sentence states that an additional 325,305 cubic yards of native soil containing elevated arsenic is planned for removal. Please explain where the arsenic soils are located in the consolidation area. Please provide the average, maximum and minimum concentration of the arsenic and its leachability (TCLP). Please provide the remedial standard selected for the arsenic laden material and discuss how the removal of the arsenic contaminated soils will be verified.

(5) Page 3, *Sulfate Concentrations, Leachability and Mass*, 2nd paragraph, 1st sentence: It states that after the removal is complete, the total mass of sulfate remaining in the Master Planned Community (MPC) would be reduced by approximately 55 percent. Please provide an estimate on the average concentration of sulfate which will remain in the MPC. Please provide the remedial standard chosen by KLC for sulfate.

Comments on the KLC Evaporation Pond Sludge Relocation Project (drafted by Harper Contracting, Inc:

(1) Page 4, *Safety, Environment, and Traffic Control*, 2nd paragraph, bulleted list: It states that Harper anticipates the need for the drafting of a Safety, Health and Environmental Action Plan, a job specific traffic control plan, a fugitive dust control plan, a hazardous materials spill prevention and cleanup plan, a storm water pollution prevention plan and an emergency plan. DERR advises KLC and Harper Contracting that the plans, which cover various environmental controls and specify health and safety measures on-site, should be provided to DERR and EPA for review.

(2) Page 4, *Safety, Environment, and Traffic Control*, 2nd paragraph, bulleted list: KLC and Harper Contracting are advised that a decontamination plan should be developed for work activities associated with the removal of the arsenic contaminated material. Please provide a copy to DERR for review. DERR also advises both parties that a cross contamination prevention plan should be developed to explain how remediated areas will be protected from being impacted by nearby removal activities.

(3) Page 5, *Safety, Environment, and Traffic Control – Loading and Hauling*, 1st paragraph, 4th sentence: It states that decontamination sites will be equipped so that the haul truck beds can be swept off and/or blown off with compressed air. Please explain the appropriateness of using compressed air to decontaminate trucks carrying material with elevated concentrations of arsenic. Please discuss the level of exposure that workers performing decontamination activities using compressed air will confront.

(4) Page 6, *Safety, Environment, and Traffic Control – Haul Road Maintenance*, 1st paragraph, 3rd sentence: It states that when conditions exist that are unsafe (i.e., soft spots, sharp curves, x-ings, spilled materials, ruts, etc.) maintenance equipment will be dispatched immediately to repair the area. Please explain in more detail how spilled materials will be removed and how the removal of the material will be verified.

(5) Page 6, *Safety, Environment, and Traffic Control – Dust Control*, 1st paragraph: Please explain the dust control requirements for the project and the air quality standards the project will have to meet. Provide the air monitoring specifications for review by DERR

Comments on KLC's Appendix A – Post Removal Sampling and Analysis Plan:

(1) Page 1, Section 1.0 *Introduction*, 2nd paragraph, 1st sentence: It states that after sludge removal, samples will be collected to document the total lead and arsenic concentration of the post removal surface. The sludge material in the original SJEP was a source for the sulfate contamination in Zone B of the Southwest Jordan Valley Ground Water Plume. The sulfate-laden sludge was consolidated on-site and capped during the initial remediation of the site. As proposed in the current reclamation plan, some mixed soils with a potential for elevated sulfate concentrations will be left on-site in areas that may be irrigated. Irrigation may effectuate the release of sulfate to the underlying aquifer. Please explain why KLC will not be documenting the sulfate concentration in the soils of the post removal surface.

(2) Page 2, Section 3.0 *Sampling Procedures*: DERR suggests that KLC discuss the frequency of sample collection and provide the acreage that each sample represents. Since this is a proposed residential development, perhaps narrowing the size of the sampling area to a traditional quarter acre lot size or smaller would be appropriate.

(3) Page 3, Section 3.0 *Sampling Procedures – Analyses*, 1st paragraph: Please explain why post removal samples will not be analyzed for sulfate.

(4) Page 3, Section 4.0 *Quality Assurance/Quality Control Samples*: Please explain why precision has been chosen as the only measure of quality control for the project. Please explain why accuracy, representativeness, comparability and completeness are not proposed as quality control checks.